APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,644	03/09/2004	Scott Meredith	M61.12-0602	2206

27366 7590 02/23/2007	EXAMINER	
WESTMAN CHAMPLIN (MICROSOFT CORPORATION)	LOVEL, KIMBERLY M	
SUITE 1400		
900 SECOND AVENUE SOUTH	ART UNIT	PAPER NUMBER
MINNEAPOLIS, MN 55402-3319	2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

Office Action Summary	Application No.	Applicant(s)
	10/796,644	MEREDITH ET AL.
	Examiner	Art Unit
	Kimberly Lovel	2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 November 2006</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to the Amendment filed 20 November 2006.

2.   Claims 1-25 are pending in this application. Claims 1 and 14 are independent.

In the Amendment filed 20 November 2006, claims 1-4 and 14-16 have been amended.

This action is made Non-Final.

3.   The rejections of claims 1 and 6 as being anticipated by the article "IntelliClean:

A Knowledge-Based Intelligent Data Cleaner" by Lee et al; claims 2-4 as being

unpatentable over the article "IntelliClean: A Knowledge-Based Intelligent Data Cleaner"

by Lee et al in view of the article "Mining Generalized Patterns from Web Logs" by Ling

et al; claims 14-16 and 18 as being unpatentable over the article "IntelliClean: A

Knowledge-Based Intelligent Data Cleaner" by Lee et al in view of the article "Mining

Generalized Patterns from Web Logs" by Ling et al; claims 5 and 17 as being

unpatentable over the article "IntelliClean: A Knowledge-Based Intelligent Data Cleaner"

by Lee et al in view of the article "Better Rules, Fewer Features: A Semantic Approach

to Selecting Features from Text" by Blake et al; claims 7-8 and 19-20 as being

unpatentable over the article "IntelliClean: A Knowledge-Based Intelligent Data Cleaner"

by Lee et al in view of the article "Faster Algorithm of String Comparison" by Yang et al;

and claims 9-13 and 21-25 as being unpatentable over the article "IntelliClean: A

Knowledge-Based Intelligent Data Cleaner" by Lee et al in view of the article "From

Data Mining to Knowledge Discovery in Databases" by Fayyad et al have been

withdrawn as necessitated by amendment.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4.   **Claims 1-13** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 recites a method of compressing a log of linguistic data, the log having a plurality of linguistic help query strings, each string being including at least two tokens, the method comprising: applying a compression operation to each string; determining if any two strings match each other after the compression operation; and removing one of the two matching strings from the log.

If the two strings match each other, then one of the matching strings are removed from the log. However, if it is determined that none of the strings match each other, the result of the method is unclear. Therefore, the claimed subject matter lacks a practical application of a judicial law exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for removing one of the two matching strings form the log only when it is determined that the two strings match.

Claims 2-13 are dependent on claim 1 and therefore are rejected on the same

grounds as claim 1.

To allow for compact prosecution, the examiner will apply prior art to these

claims as best understood, with the assumption that applicant will amend to overcome

the stated 101 rejections.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

5.   **Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

US Patent No. 6,584,464 to Warthen (hereafter Warthen) in view of US PGPub

2004/0199498 to Kapur et al (hereafter Kapur).

Referring to claim 1, Warthen discloses a method of compressing a log of

linguistic data (see column 4, lines 65-66), the log having a plurality of linguistic help

query strings [questions] (see column 4, lines 38-41), each string being including at

least two tokens [i.e., Where can I find information on the sport bicycling?] (see column

4, lines 32-36). However, Warthen fails to explicitly disclose the further limitations of the

actual steps taken to compress the log. Kapur discloses receiving various query log

files from various sources and then processing the logs (see [0035], lines 1-8), including

the further limitations of:

applying a compression operation [canonicalized] to each string (see [0036],

lines 3-5);

determining if any two strings match each other after the compression operation

[consolidate] (see Fig 5, step 510); and

removing one of the two matching strings from the log [multiple occurrences of

the same query are included as a single query] (see [0035], lines 10-13).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to use the query processing engine disclosed by Kapur to compress the log of

questions disclosed by Warthen. One would have been motivated to do so in order to

produce a set of questions which improve the process of determining the context of a

user query and then associating the most useful result with the query (Warthen: see

column 1, lines 43-51) in order to produce a set of questions which improve the process

of determining the context of a user query and then associating the most useful result

with the query.

Referring to claim 2, the combination of Warthen and Kapur (hereafter Warthen/Kapur) discloses the method of claim 1, wherein the log is a log of user-initiated inputs [users' questions] to a help interface [client interface] (Warthen: see column 3, lines 59-67).

Referring to claim 3, Warthen/Kapur discloses the method of claim 2, wherein each string is a query relative to a help function (Warthen: see column 3, lines 59-67).

Referring to claim 4, Warthen/Kapur discloses the method of claim 3, wherein each help-related query is relative to a computer system [corporate network answering employee questions] (Warthen: see column 3, lines 59-67).

Referring to claim 5, Warthen/Kapur discloses the method of claim 1, wherein the compression operation is character-based [removing odd symbols] (Kapur: see [0039]-[0048]).

Referring to claim 6, Warthen/Kapur discloses the method of claim 1, wherein the compression operation is token-based (Kapur: see [0036], lines 23-28).

Referring to claim 7, Warthen/Kapur discloses the method of claim 1, wherein the compression operation is subsumption (Kapur: see [0039]-[0048]).

Referring to claim 8, Warthen/Kapur discloses the method of claim 7, wherein subsumption includes applying an impossibility condition to selectively compute edit distance [edit distance d] (Kapur: see [0048], lines 13-31).

Referring to claim 9, Warthen/Kapur discloses the method of claim 1, and

further comprising:

applying a second compression operation [tokenized] to each string (Kapur: see

[0036], lines 23-28);

determining if any two strings match each other after the second compression

operation [convergence] (Kapur: see [0038], lines 1-2); and

removing one of the two matching strings from the log (see [0038], lines 5-6).

Referring to claim 10, Warthen/Kapur discloses the method of claim 9, wherein

the first compression operation is character-based [canonicalize – item 500] and the

second compression operation is token based [tokenize – item 520] (Kapur: see Fig 5).

Referring to claim 11, Warthen/Kapur discloses the method of claim 10, and

further comprising applying subsumption [Generation of Extensions, Associations and

Alternatives – items 570, 580 and 590] after the second compression operation

[tokenize] is complete (Kapur: see Fig 5).

Referring to claim 12, Warthen/Kapur discloses the method of claim 11,

wherein the subsumption operation is repeated for the log [the log would be processed

by the processing engine one more time] (Kapur: see [0035], lines 3-8).

Referring to claim 13, Warthen/Kapur discloses the method of claim 1, and

further comprising training a statistical process with the compressed log (Kapur: see

[0008]).

Referring to claim 14, Warthen discloses a system for compressing a query log

having a plurality of linguistic help query strings [questions] (see column 4, lines 38-41

and 65-66), each string having a plurality of tokens [i.e., Where can I find information on the sport bicycling?] (see column 4, lines 32-36). However, Warthen fails to explicitly disclose the further limitations of the actual steps taken to compress the log. Kapur discloses receiving various query log files from various sources and then processing the logs (see [0035], lines 1-8), including the further limitations of:

an input for receiving a raw query log (see [0035], lines 3-8);

memory [memory or database file 310] for storing the raw query log (see [0035], lines 19-31);

a processor [query processing engine 300] (see Fig 3) for applying at least one compression operation [canonicalized] to each string (see [0036], lines 3-5), and for scanning the modified strings to determine if any match each other [consolidate] (see Fig 5, step 510) so that one of the matching strings can be removed (see [0035], lines 10-13); and

an output for providing a compressed query log once the removal is complete (see [0025]) in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the query processing engine disclosed by Kapur to compress the log of questions disclosed by Warthen. One would have been motivated to do so in order to produce a set of questions which improve the process of determining the context of a

user query and then associating the most useful result with the query (Warthen: see

column 1, lines 43-51).

Referring to claim 15, Warthen/Kapur discloses the system of claim 14, wherein

each string is a query relative to a help function (Warthen: see column 3, lines 59-67).

Referring to claim 16, Warthen/Kapur discloses the system of claim 15, wherein

each help-related query is relative to a computer system [corporate network answering

employee questions] (Warthen: see column 3, lines 59-67).

Referring to claim 17, Warthen/Kapur discloses the system of claim 14, wherein

the compression operation is character-based [removing odd symbols] (Kapur: see

[0039]-[0048]).

Referring to claim 18, Warthen/Kapur discloses the system of claim 14, wherein

the compression operation is token-based (Kapur: see [0036], lines 23-28).

Referring to claim 19, Warthen/Kapur discloses the system of claim 14, wherein

the compression operation is subsumption (Kapur: see [0039]-[0048]).

Referring to claim 20, Warthen/Kapur discloses the system of claim 19, wherein

subsumption includes applying an impossibility condition to selectively compute edit

distance [edit distance d] (Kapur: see [0048], lines 13-31).

Referring to claim 21, Warthen/Kapur discloses the system of claim 14, and

further comprising:

applying a second compression operation [tokenized] to each string (Kapur: see

[0036], lines 23-28);

determining if any two strings match each other after the second compression

operation [convergence] (Kapur: see [0038], lines 1-2); and

removing one of the two matching strings from the log (see [0038], lines 5-6).

Referring to claim 22, Warthen/Kapur discloses the system of claim 21, wherein

the first compression operation is character-based [canonicalize – item 500] and the

second compression operation is token based [tokenize – item 520] (Kapur: see Fig 5).

Referring to claim 23, Warthen/Kapur discloses the system of claim 22, and

further comprising applying subsumption [Generation of Extensions, Associations and

Alternatives – items 570, 580 and 590] after the second compression operation

[tokenize] is complete (Kapur: see Fig 5).

Referring to claim 24, Warthen/Kapur discloses the system of claim 23, wherein

the subsumption operation is repeated for the log [the log would be processed by the

processing engine one more time] (Kapur: see [0035], lines 3-8).

Referring to claim 25, Warthen/Kapur discloses the system of claim 14, and

further comprising training a statistical process with the compressed log (Kapur: see

[0008]).

Response to Arguments

6.   Applicant's arguments with respect to claims 1-25 have been considered but are

moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-

2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

<div style="text-align:right">

Kimberly Lovel
Examiner
Art Unit 2167

</div>

12 February 2007
kml